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SCHRANK'S GENERA.

By A. RADCLIFFE GROTE, A. M.

Before discussing Schrank's genera, mainly those referable to the Agrotidæ, I wish to state the case of the Tentamen and give the date which we may accord to it. The Tentamen is of the utmost value to the nomenclator. Alone by this sheet can we trace the origin of certain generic names now in use and fix their types. Such are: *Diphthera*, *Polia*, *Agrotis*, *Plusia*, *Brephos* and others. The type, for instance, of *Agrotis* is *segetum*, and in this sense the term is now used, after I had pointed out the true type; but for this type we are indebted to the Tentamen. From the mixed character of Ochsenheimer's genera and subsequent authorities, including Boisduval, it would be difficult to find the type of *Agrotis*, and perhaps, without the Tentamen, our researches might lead us wide away. All this disturbance the Tentamen saves us, and its "catalogue genera" are besides the first attempt to arrange the Order in the spirit of modern enquiry. It is the same with *Plusia*; the Tentamen gives us the name and the type: *chrysitis*, and thus fixes for us the group to which the name is referable. This genus is next on the list for disintegration. We have in it at least two types which classifiers must hold fast and be thankful for: *chrysitis* and *gamma*. When we see how gladly, upon the same principle of priority, Prof. J. B. Smith sweeps away generic titles, held for twenty-five years in America, to reinstate names of Walker's, whose correct application is, from the state of the case, doubtful, and even sometimes impossible, we feel some amazement at the prejudice against Hübner's titles. It may have somewhat abated since I show that Ochsenheimer's titles are also "catalogue names" in part, and equally without diagnosis.

The Tentamen is undated. Were it dated the discussion would be avoided. The date fixed by Mr. Scudder, 1806, remains, and without any argument to overturn it having been published to my knowledge. However, Mr. Dyar uses "1810?" I do not think anything is gained, but rather much lost, in stability by quoting dates with a query. These must be ascertained as near as possible and agreed upon. This date of Mr. Scudder's is therefore probable, but it is not certain. Certainty, as to the Tentamen, is only given us by Ochsenheimer, in his fourth volume (1816); I mean that certainty which convinces anyone endowed with reasoning faculties who is willing to use them. [The fact is that the opponents of Hübner adopt, without scruple, synonymy, which is

twenty times as disturbing and doubtful.] Ochsenheimer gives us this certainty, and, in my preface to the 2d part of the Buffalo Check List, I give Ochsenheimer's words, published in 1816, that the Tentamen only came into this writer's hands long after his third volume (1810) was printed, therefore he could not have used anything out of the Tentamen at an earlier date (than 1816.) And in 1816 Ochsenheimer uses the Tentamen names, and this settles the fact that the Tentamen was known in 1816 and used and useful. The fact is further settled that Ochsenheimer did not have the Tentamen in 1810. Now, when did he get it? The words used by him: "*daher konnte ich früher nichts davon aufnehmen,*" would seem to imply that if he *had* received it earlier (*frueher*), he would have used it; *i. e.*, in his third volume, 1810; and this construction favors Scudder's date of 1806. In fact, the whole of Ochsenheimer's remarks, p. viii, vol. iv, produce the effect that Ochsenheimer favorably considered the Tentamen; as a whole, regarded it as an equal authority, and, had he thought it necessary, might have ascertained and given its exact date. Whether he knew it or not does not appear. This he does not do, but, in the course of his volume, he uses in the groups he there catalogues the following names, crediting Hübner; Ochsenheimer gives (*supra*) the full title of the Tentamen, so that there is no doubt of his citing this publication. Lemoniades (for or under *Melitea*), Dryades (for or under *Argynnis*), Limnades (*Euplæa*), Hamadryades (*Vanessa*), Najades *Limenitis*, Potamides (*Apatura*), Oreades (*Hipparchia*), Rustici (*Lycæna*), Principes (*Papilio*), Mancipia (*Pontia*), Urbani (*Hesperia*). So much for the butterflies. Ochsenheimer uses the plural names out of the Tentamen in the synonymy, the names formed out of the generic title; and hence for assemblages, as I understand Hübner, who uses in the Verzeichniss these very names in this sense as higher than genera. It makes no difference that Ochsenheimer makes them synonyms; what is in the synonymy may one day obtain. The point is the recognition of the Tentamen. In the Agrotidæ and Apatelidæ Ochsenheimer cites Hübner, and gives priority to the following names: *Diphthera* (p. 63), *Agrotis* (p. 66), *Graphiphora* (p. 68), *Miselia* (p. 72), *Polia* (p. 75), *Xanthia* (p. 82), *Cosmia* (p. 84), *Xylina* (p. 85), *Plusia* (p. 89), *Heliothis* (p. 91), *Anthophila* (p. 93), *Brephos* (p. 96), *Euclidia* (p. 96). Now I would like to know what the critics have to say to this recognition of the Tentamen? In other cases in these families Ochsenheimer conscientiously cites the Tentamen names, but refers them to the synonymy. It is clear why he does so in some cases, not clear in others.

Clear when he gives *Jaspidia* as a synonym of *Pæcilia*, not clear when he cites *Heliophila* as a synonym of *Leucania*. All these names must be restored to Hübner and their use in the Tentamen confers the inestimable benefit that we are given their exact types. Hübner, in the Tentamen, does not seem to know of Schrank's Fauna Boica; in the Verzeichniss he uses some of the names.

It is, then, certain, that in 1816 Ochsenheimer adopts the Tentamen; certain, that he says he received it long after his third volume, in 1810, was published. These are the two sure points. It is certain also, that Hübner makes the Tentamen the basis of the Verzeichniss; although he changes the generic titles (*coitus* H.), he uses the higher divisions (*stirps* H.) of the Tentamen. Now the Verzeichniss is later than 1816, from internal evidence, and we give therefore Ochsenheimer's fourth volume the due priority (see Scudder's argument). I give, once for all, 1818 as the date of the Verzeichniss, in order to show this position of the two works and to abate the query in citations and again because, having given Ochsenheimer's fourth volume the *pas*, there is no other work with which the Verzeichniss collides, even if we admit the full dates of the signatures as assigned by Scudder. As to the Agrotidæ (see my Bremen list of 1895) it seems probable that the date of these signatures may be earlier than Scudder supposes, say certainly 1822, as compared with the Zutraege. It must be remembered that the law of priority, at least as to genera, was then, as even now, loosely applied, as compared with its use to species. Subjective notions are freely displayed by writers in dealing with genera, even nowadays, from Boisduval and Guenée on. They consider themselves superior to Hübner, and some, in fact, to all creation. Now, holding these points fast, I would propose to give Ochsenheimer's third volume the same priority over the Tentamen that we give to his fourth over the Verzeichniss. I would date the Tentamen 1811. I prove the Tentamen thus wholly by Ochsenheimer and take its date as being subsequent to 1810, when Ochsenheimer says he received it. This also has the practical value that we save all collision between Ochsenheimer's third volume and the Tentamen, a collision which it is vitally necessary to avoid, in view of the nomenclature in use, the "language idea." We must do it to save *Saturnia* under Ochsenheimer's restriction; this is, of itself, sufficient; for it is Ochsenheimer's restrictions of Schrank, in the third volume, 1810, which are important to preserve. If thereby an inaccuracy is committed, it is one owing to Hübner's peculiar omission, and it is condoned by the practical effect of avoiding the conflict between Hüb-

ner and Ochsenheimer. For there is then no vital conflict left; so far as my researches go there are but two or three corrections necessary in the Agrotidæ, where Ochsenheimer has rejected a few names without apparent reason. He adopts far more than he rejects, and the rejections arise from special causes, in the main, to be studied out by the systematist and nomenclator. All ground for radical disputes would be taken away by this course. There is no reason why we should be better than Ochsenheimer in his fourth volume, and take a different stand as to Hübner. Above all we secure to the nomenclator the great benefit of the undisputed use of the Tentamen in ascertaining the true origin of many names in use and the unfailing designation of their types.

We may now consider certain of Schrank's genera, all those of the Agrotidæ, and a few of the others. They date from 1802; the species are described in Vol. I, 1801.

Saturnia.

1802. Schrank, Faun. Boic. II, 149.—*Pyri, spini, carpini, tau*.

1810. Ochsenheimer, Schm. Europ. III, 1.—*Pyri spini, carpini*. [This restriction of Ochsenheimer's, is that to-day adopted. *Heæra* Tentamen 1811, for *carpini* (*Pavonia minor*) becomes a synonym, in the absence of character.]

1895. Grote, Syst. Lep. Hild.—Designates *pyri* (*Pavonia major* L.) as type.

Bombyx.

1802. Schrank, Faun. Boic. II, 150.—*Mori, versicolor*. [This restriction of the Linnean genus *Bombyx* is important, because it fixes the type as *mori*, through Ochsenheimer's erection of the genus *Endromis* for *versicolor*, 1810, III, 15. The generic title *Bombyx* has, then, been misapplied to the Lachneidæ by authors, and its use in Staudinger's Catalogue must be abandoned. I am therefore correct in designating *mori*, which was virtually the type since 1810.]

Pæcilia.

1802. Schrank, Faun. Boic. II, 157.—*Perla, aprilina, runica*. [The name falls because preoccupied.]

Cucullia.

1802. Schrank, Faun. Boic. II, 157.—[Refers here his families G & H, I, 325 et seq.] Fam. G: *artemisia, abrotani, absynthii, verbasci*,

tanacetī, scrophulariæ, linariæ, lactucæ, umbraticæ. [It is to this "family," that the generic term must be applied and the type sought, since Schrank's translation of the term: "Mönchseule," and his reference to the hooded collar sufficiently indicate his purpose which falls in with the modern use of the term.] Fam. H: *exsoleta, petrificata, margodea, putris rhizolitha, perspicillaris*.

1816. Ochsenheimer, Schm. Eur. IV, 87.—*Spectabilis, gnaphalii, abrotani, absinthii, artemisiæ, argentina, lactea tanacetī, dracunculi, umbratica, chamomillæ, lactucæ, lucifuga, asteris, verbasci, scrophulariæ*. [This restriction accords with the above statement, that a "hooded owlet" must be the type of *Cucullia*. *Tribonophora* Hubn. 1811 (type: *umbratica*) is referred by Ochsenheimer as a synonym.]

1818. Hübner, Verzeichniss, 246.—*verbasci, scrophulariæ*. [This restriction is most useful and enables us to fix the type; which is one of the group with uneven fringes.]

1874. Grote, List N. Am. Noct. 28.—Designates *verbasci* as type.

Hadena.

1802. Schrank, Faun. Boic. II, 158.—[Refers here his "families"] M. and N., I, 348 et seg., and translates his term by: Trübeule. Fam. M.; *typica, chenopodii, atriplicis, præcox, pisi, oleracea, hordei, (deaurata), xanthographa, piniperda*. Fam. N.: *lucipara, cucubali*.

1816. Ochsenheimer, Schm. Eur. IV, 71, cites *Hadena* Schrank and includes 28 species, fully as dissonant as Schrank's material, some with hairy, some with naked eyes. But he excludes every species cited under Schrank's family M, and includes both *lucipara* and *cucubali* with Schrank's family N, thus restricting the genus in this sense. Henceforth either *lucipara* or *cucubali* must be type.

1818. Hübner, Verzeichniss, 216.—Includes among seven species, of the two only *cucubali*, leaving out *lucipara*; thus, from 1818, *cucubali* is virtually the type. *Typica* was excluded in 1816.

1895. Grote, Ent. Rec. VI, 78.—Recounts the above and designates *cucubali* as the type. [The genus *Dianthæcia* Boisd. thus becomes apparently identical, since its type seems not separable on structural grounds, though *cucubali*, the "genuine Trübeule," is hardly a typical *Dianthæcia*. It is instructive to see, in general early literature, a tendency to use *Hadena* rather for a hairy eyed type. In an old collection, named at least nearly sixty years ago, made in Hilderheim, I find every species of *Dianthæcia* is ticketed "Hadena" among them *cucubali*.

Catocala.

1802. Schrank, Faun. Boic. II, 158. [Refers here his "family" V, I, 364, and translates his generic term by: Prachteule.] Fam. V: *maura*, *fraxini*, *nupta*, *pacta*, *conjuncta*, *elocata*, *sponsa*, *promissa*, *paranympha*, *parthenias*, *puella*. [It thus contains the types of *Catocala*, *Mania* and *Brephos*. But, as with *Cucullia*, though with somewhat less clearness, we must seek the type within the limits of the modern genus, a species of which seems meant as typical by Schrank, though here, as elsewhere, no "type" is indicated.]

1816. Ochsenheimer. Schm. Eur. IV, 94.—[Restricts the term in consonance with the above idea.] *Fraxini* and 16 other species all referable here, the entire European species, and refers also *Blephara* (*Blepharum*) Hübner. Tent. 1811, 2, as synonymous. [The type of *Blepharum* is *sponsa* and the course of Ochsenheimer should be followed from general considerations.]

1818. Hübner, Verzeichniss, 276, (*Catocala*). *Fraxini*, sole species and therefore type.

1874. Grote, List N. Am. Noct. 41.—Designates *fraxini* as type. [Since Hübner, in the Tentamen 1811, proposes names for the three original types contained in *Catocala* Schrank: *Lemur maura*, *Blepharum sponsa*, *Brephos parthenias*, Ochsenheimer is justified in taking one for the original genus and his choice is approved by Schrank's manifest intentions. Whether *sponsa* or *fraxini* becomes the type of *Catocala*, may perhaps be disputed. I follow Hübner's Verzeichniss, rather than the indication of the Tentamen, for the sake of greater clearness and because it seems unessential of Hübner's three names, *Lemur* is preoccupied, *Blepharum* a synonym and *Brephos* remains valid.]

Pyrausta.

1802. Schrank, Faun. Boic. II, 163.—*Cingulalis*, *lemnalis*. [*Cingulalis* may be taken as type and this will conform with the use of the term by Prof. Fernald.]

Agrotera.

1802. Schrank, Faun. Boic. II, 163.—*Nemoralis*, sole species and therefore type.

Pyralis.

1802. Schrank, Faun. Boic. II, 162.—*Pinguinalis*, sole species, and this restriction apparently makes *pinguinalis* the type of the Linnean genus. [*Aglossa* Latr. would be synonymous with *Pyralis* under his restriction.]

Polypogon.

1802. Schrank, Faun. Boic. II, 162.—*Barbalis*, *tentaculalis*. [*Tentaculalis* should be taken as type from subsequent restrictions. The name appears to have been neglected and is perhaps not available. See *Erpyzon*.]

Hypena.

1802. Schrank, Faun. Boic. II, 163.—*Proboscidalis*, *rostralis*, *pulpalis*.

1818. Hübner, Verzeichniss, 345.—*Palpalis*, *decimalis*, *obsitalis*, *rostralis*. [Excludes *proboscidalis*, leaving the term for either *rostralis* or *palpalis*.]

1874. Grote, List N. Am. Noct. 52.—Designates *rostralis* as type. The term seems to have been taken by Schrank from Fabricius, but the latter is not apparently quoted.

Scopula.

1802. Schrank, Faun. Boic. II, 162.—*Paludalis*, *dentalis*.

Nymphula.

1802. Schrank, Faun. Boic. II, 162.—*Potomagal*, *nymphæalis*. [I may leave the designation of the type in those two genera to my friend, Prof. Fernald.]

Erpyzon.

1811. Hübner, Tentamen, 2.—*Barbalis*, sole species and therefore type. [This name appears neglected and, instead, *Pechipogon* Hübn., Verz., is used by European authorities, such as Staud. Catalog, Hoffman, etc. Now *Pechipogon* is used in the Verzeichniss for *plumigeralis* (*barbalis* Hübn. Pyr. 18) and *pectitalis* Hübn. Pyr. 122. *Barbalis* seems correctly identified by Hübn. Pyr. 18, and his Verzeichniss name *plumigeralis* a synonym. His identification of his *barbalis* with *tarsicrinalis* Knoch is not followed. This genus, *Pechipogon* Verz., would then be the Verzeichniss substitute for *Erpyzon*. Hübner writes “Pechipogo.” The genera are arranged under the group “Herpyzones,” taken from the Tentamen. I conclude that *Erpyzon* Hübner, 1811, must clearly be used for *barbalis* Cl.]

This concludes my paper. Since, within the lifetime of a single individual (my own) we have progressed from a state in which we had but a dozen named Apatelidæ and Agrotidæ in our collections to one in which we have upwards of 1,800, it is clear that we are in the beginning of the use of our names, and an erroneous nomenclature is hardly

yet started by means of "Butterfly Books." I would appeal to every thinking lepidopterist to discountenance the use of erroneous generic names such as *Acronycta*, *Xylina*, *Erastria*, *Taniocampa*, in order to spare future students from the necessity of a more troublesome change. It has come to such a pass in Europe that the names for genera are largely wrong, and that in England one set of names (Guenée's in the main) are used, on the Continent another (Lederer's in the main). I have made the effort from the first, and as soon as I saw (1873-4) that the nomenclature was improperly founded, to restore the proper generic titles. A heavy responsibility rests on those who, unable to furnish any but subjective and erroneous arguments, try to overturn this work. For it must ultimately obtain, but not, perhaps, until the wrong names have permeated literature and produced confusion. The authors of this confusion are then Messrs. Lintner, Smith and their followers, and time will place them in this position if they persist. But it is yet time. Nothing but the most tentative work has yet been published on these families. The species have been barely covered with titles. All the "Revisions" are so faulty in almost every respect that they will soon be revised. Let us then clear the track of wrong generic titles and refuse to enter into the inheritance which modern European literature offers us. Each genus must have its exact type, and the oldest generic names, irrespective of persons, must prevail.

EARLY STAGES OF SOME BOMBYCINE CATERPILLARS.

By A. S. PACKARD.

The following observations were made during the summer of 1894, and I desire to express my indebtedness to Mr. William Dearden, of Providence, who kindly furnished me with the eggs of certain of the species.

***Perophora melsheimerii*.**

The eggs were received from Mr. H. Meeske, of Brooklyn; they hatched in Providence, R. I., June 21, 22.

Larva, Stage I.—Length 3 mm. Head and prothoracic shield of the same width, being as wide as the body in front, which slightly tapers toward the end from the middle of the body; they (head and